

## **Energy management – awareness and motivation**

Digital Equipment Company Limited



- 12.5% reduction in energy consumption
- £150 000 savings
- Initiatives aimed at both company staff and contract facilities management/maintenance staff



***ENERGY EFFICIENCY***

**BEST PRACTICE  
PROGRAMME**

## HOST ORGANISATION

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*'Energy management is important to Digital, as any savings generated go straight to the bottom line. They also help us to meet our Earth Vision corporate environmental policy objective to conserve energy.'*

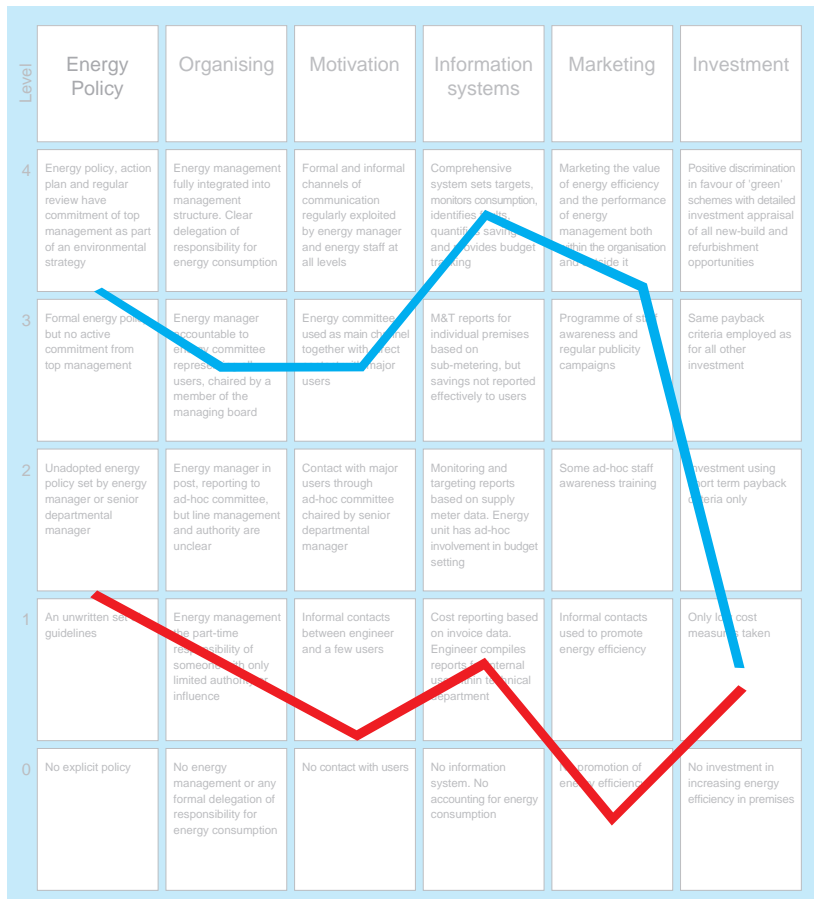
**DR. ASHLEY DABSON**

**UK Property Manager, Digital Equipment Company Limited**

### **DIGITAL EQUIPMENT COMPANY LIMITED**

Digital Equipment Company Limited is the UK sales subsidiary of the US-based global IT company. It employs over 3500 staff and occupies 30 buildings. Digital's annual energy bill was approximately £3.6 million in 1994/95, over 90% of which was electricity.

## INTRODUCTION



Energy management matrix, showing improvements in Digital's energy management capability before and after the campaigns. Please refer to page 4 of this Case Study for an explanation of the matrix.

■ 1992 ■ 1994

### INTRODUCTION

The attitude of staff can have a significant effect on an organisation's use of energy. By increasing staff awareness of energy efficiency issues, a culture change can be achieved that results in positive attitudes to energy efficiency. The ideal state is reflected by an enterprise wide attitude, where energy efficiency measures come naturally to each member of staff.

Digital adopted the culture change approach in its determination to address specific energy issues, but did not stop at directly employed staff. The company also initiated training for its facilities and maintenance contractors, with positive effect.

This Case Study describes Digital's approach to energy efficiency and, in particular, its success in reducing office energy consumption by 12.5% over two years, adding around £150 000 to its bottom line.

### BACKGROUND

Concerted energy management in Digital started in 1992 with the appointment of an energy manager with responsibilities for all the company's sales offices. This commitment was reinforced in 1993 when Digital UK's Chairman joined the Department of the Environment's (DOE's) Making a Corporate Commitment (MACC) campaign.

Since the 1980s, the IT market has become increasingly competitive and profit margins cut. Digital has therefore sought all opportunities to reduce costs and improve profitability. Given the difficult trading conditions, the energy manager has concentrated on achieving savings through simple housekeeping measures that have required little or no investment. This in turn has led to staff motivation and training being given high priority.

The energy manager quickly recognised that the training and motivational needs of staff engaged in facilities management (FM) differed greatly to those of sales and office staff. This led to two distinct but complementary motivational approaches.

## MOTIVATING FM STAFF

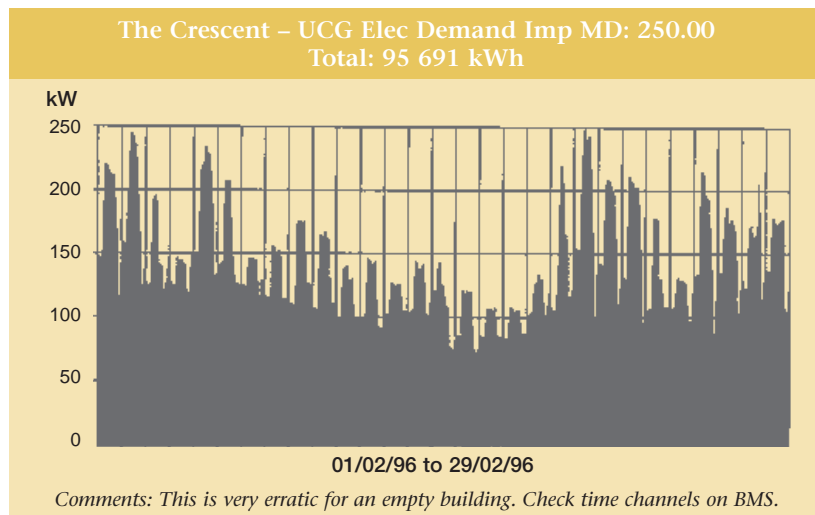


Figure 1:  
A typical monthly energy profile  
annotated with the energy  
manager's comments

### MOTIVATING FM STAFF

Digital contracts out the majority of its facilities and building management functions. However, this has not inhibited Digital's energy manager from identifying training needs for contract FM staff, and providing them with appropriate training courses.

The energy manager is responsible for administering both the company's energy and facilities budgets. In appropriate circumstances, he is able to offset expenditure between the energy and FM budgets which is helpful in implementing the FM staff training programme.

The FM contract requires the contractor to operate buildings in an energy efficient manner. To maintain the contractor's motivation, monthly energy monitoring reports are produced so that energy efficiency information can be regularly reviewed.

Initially, the energy manager tried to get each building's facility manager to produce a monthly monitoring graph. This proved impractical. However, at the same time, the competitive electricity market was developing. As most of Digital's buildings had demands of over 100 kW, they were equipped with Code 5 metering systems

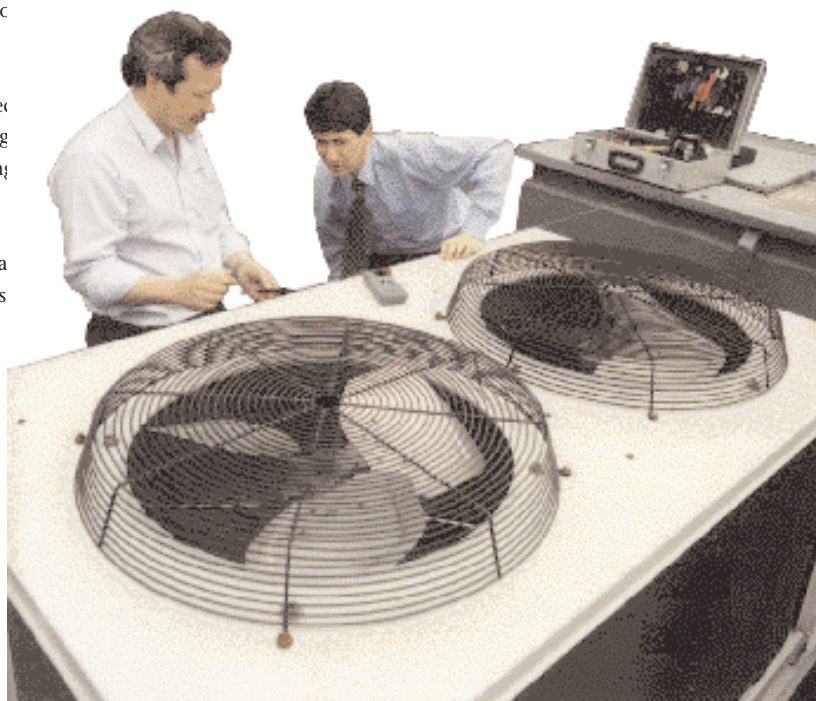
which enabled remote interrogation and data collection. This permits the energy manager to produce half-hourly electricity demand profiles for each of the company's buildings.

The use of electricity demand profiles has three benefits:

- the profiles demonstrate regular high level commitment to energy efficiency by Digital
- the data is detailed, up to date, and specific to each FM manager's particular building
- energy benefits can be derived from thoughtful and imaginative interpretation of the profiles.

The profiles (see figure 1) are distributed to the FM managers each month. The graphs are annotated with the energy manager's comments. These include questions to help focus the FM manager's attention on periods of apparent high or low consumption. Facilities managers are encouraged to investigate the causes of these features, reporting back on their findings and highlighting opportunities for future electricity savings.

Digital's energy manager also sought to motivate contract maintenance staff to adopt good practice in the use of building services controls by providing appropriate technical training. The contract facilities managers also work closely with maintenance staff when considering the electrical demand profiles of their buildings. They are



Training a maintenance contractor

## SALES AND OFFICE STAFF

By ensuring close cooperation between the company, FM contractors and the maintenance sub-contractors, some outstanding results have already been achieved. For example, at Digital's Winnersh site, where the maintenance sub-contractor proposed modifications to the air-conditioning system's control settings, energy costs have been reduced by almost £10 000 per year at virtually no cost.

**SALES AND OFFICE STAFF**

The company makes considerable use of networked computer equipment, with all staff having their own terminal and access to an electronic mailing system. An internal energy survey identified that, while staff consistently logged out of e-mail before going home, they did not switch off their terminals, and a significant quantity of electricity was being wasted overnight.

So Digital's energy manager began a campaign to motivate staff to switch off their terminals overnight, initially targeted at two sites. Subsequent monitoring of electricity usage revealed that an 11% reduction in overnight usage had been achieved and the campaign was therefore extended to all of Digital's sites.

With the cooperation of the information systems manager, a 'switch off' screen message is now automatically sent to all computer users as soon as they log out of e-mail. Colourful posters and an article in the company's in-house journal have reinforced the message.

**UNEXPECTED SALES BENEFITS**

The benefits of the energy efficiency campaign are also spilling over into sales of the company's PCs. For example, one of the company's sales managers asked the energy manager for consumption data on Digital's latest 'Energy Star' rated PCs. The energy manager was able to provide accurate consumption data, and to contrast its typical running costs with those of an older and less efficient design. In turn, this enabled sales staff to demonstrate to potential customers that if they were to purchase 100 new PCs, two of them would effectively be free as a result of reduced running costs.

**ENERGY MANAGEMENT MATRIX**

The energy management matrix is a simple diagnostic tool which is central to the DOE's Energy Efficiency Best Practice publications on the organisational aspects of energy management. General Information Reports 12 and 13 'Aspects of energy management' and 'Reviewing energy management' (available from BRECSU, see back page for details) describe in detail how the matrix should be used.

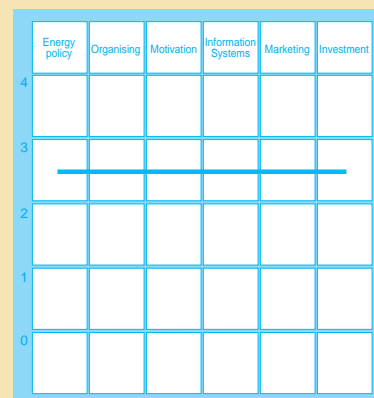
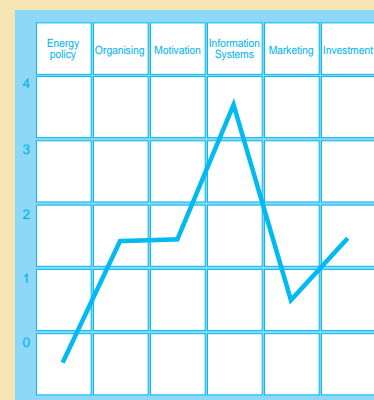
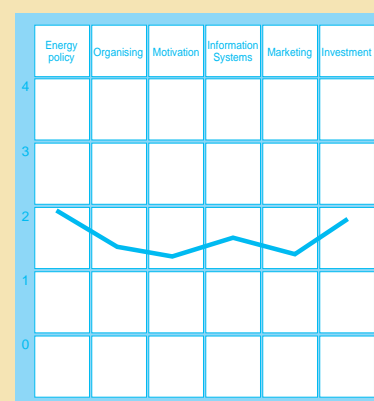
The matrix provides a quick, easy-to-use but effective method for organisations to identify and describe the current priority they attach to different aspects of energy management.

Each vertical column of the matrix deals with one of six key issues, namely energy policy; organising; motivation; information systems; marketing; and investment.

The ascending rows, from 0 to 4, represent increasingly sophisticated handling of these issues.

The objective is to achieve a balanced improvement across the columns, and to reach as close to the top as possible.

Examples of a balanced and an unbalanced matrix are shown above right. Also shown, right, is an average profile, calculated from the profiles drawn by over 1500 energy managers in a wide variety of public and private organisations throughout the UK.

*Example of a balanced matrix**Example of an unbalanced matrix**Average profile*

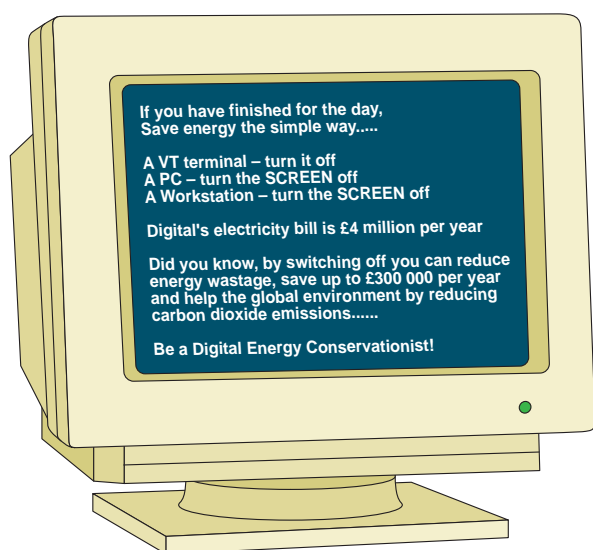
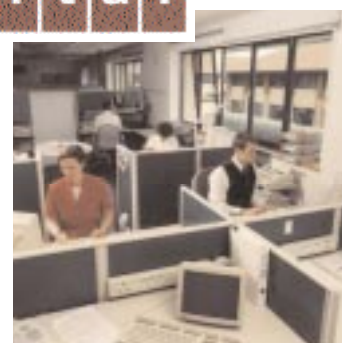
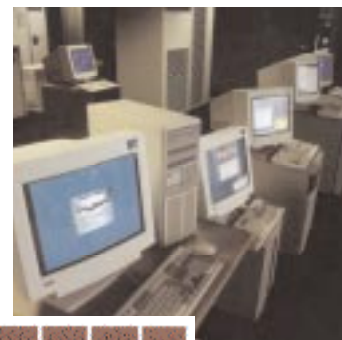


## BOTTOM LINE BENEFITS

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Digital has calculated that annual electricity savings worth around £100 000 have resulted from the switch off at night campaign. Internal costs, equating to the production of the posters and network programming for the switch off message, have been estimated as only £5000.

In 1992 the average annual energy consumption across Digital's sites was 560 kWh/m<sup>2</sup>. This fell to 520 kWh/m<sup>2</sup> in 1993 and by 1994 had reduced to 490 kWh/m<sup>2</sup>. About a third of these savings are believed to have resulted from the closure of older, less efficient buildings, whilst another third is due to the continual move towards more energy efficient IT equipment. The remaining third is credited to Digital's energy motivation and training initiatives and is worth around £150 000 to Digital's bottom line.



*'Switch off' screen message*

**The Government's Energy Efficiency Best Practice programme** provides impartial, authoritative information on energy efficiency techniques and technologies in industry and buildings. This information is disseminated through publications, videos and software, together with seminars, workshops and other events. Publications within the Best Practice programme are shown opposite.

Visit the website at [www.energy-efficiency.gov.uk](http://www.energy-efficiency.gov.uk)  
Call the Environment and Energy Helpline on **0800 585794**

#### For further specific information on:

Buildings-related projects contact:  
Enquiries Bureau

#### BRECSU

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Industrial projects contact:  
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#### ETSU

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**Energy Consumption Guides:** compare energy use in specific processes, operations, plant and building types.

**Good Practice:** promotes proven energy-efficient techniques through Guides and Case Studies.

**New Practice:** monitors first commercial applications of new energy efficiency measures.

**Future Practice:** reports on joint R&D ventures into new energy efficiency measures.

**General Information:** describes concepts and approaches yet to be fully established as good practice.

**Fuel Efficiency Booklets:** give detailed information on specific technologies and techniques.

**Introduction to Energy Efficiency:** helps new energy managers understand the use and costs of heating, lighting, etc.